

CLAIMS

We claim:

1. A component for transporting fluids from a vehicle engine through a vehicle exhaust system, said vehicle exhaust system having a catalytic element, the component comprising:

a first metallic member; and

a second metallic member attached without formation of weld spatter to the first member by an electromagnetic pulse weld, said weld positioned at a point upstream from the catalytic element, and said second member and the first member defining a flow path for fluids being transported therethrough.

2. The component according to claim 1 wherein the first member comprises a first tubular member and second member comprises a second tubular member, and the component further comprising:

a connector element attached without the formation of weld spatter by an electromagnetic weld to at least one selected from the group consisting of: the first tubular member and the second tubular member, said weld(s) positioned at a point upstream from the catalytic element.

3. The component according to claim 2 wherein the connector element, the first tubular member and the second tubular member define a curved or tortuous flow path for the fluid being transported therethrough.

4. The component according to claim 3 further comprising at least one flange attached without formation of weld spatter by an electromagnetic pulse weld to at least one item selected from the group consisting of: a terminal end of the first tubular member, a terminal end of the second tubular member and the connector element, said weld(s) positioned at a point upstream from the catalytic element.

5. The component according to claim 1 wherein the first member comprises a first tubular member and the second member comprises a second tubular member, and the component further comprising:

a secondary tubular assembly, optionally including a secondary connector element attached without formation of weld spatter by an electromagnetic pulse weld to said secondary tubular assembly, said weld positioned at a point upstream from the catalytic element; and

a connector element attached to a terminal end of the first tubular member and also attached to a terminal end of the secondary tubular assembly, said connector element and the secondary tubular assembly defining a secondary flow path for fluids transported therethrough that is not parallel to the flow path defined by the first tubular member and the second tubular member.

6. The component according to claim 5 further comprising at least one flange attached without formation of weld spatter by an electromagnetic pulse weld to at least one item selected from the group consisting of: a terminal end of the second tubular member, a terminal end of the

connector element and the optional secondary connecting element, said weld(s) positioned at a point upstream from the catalytic element.

7. The component according to claim 1 wherein the first member comprises a first tubular member and the second member comprises a second tubular member, said second tubular member attached without the formation of weld spatter to a branch opening in the first tubular member by an electromagnetic pulse weld, said weld positioned at a point upstream from the catalytic element, and wherein the first tubular member also individually defines a secondary flow path for fluids transported through the component that is not parallel to the flow path defined by the first tubular member and the second tubular member.

8. The component according to claim 7 further comprising at least one flange attached without formation of weld spatter by an electromagnetic pulse weld to at least one item selected from the group consisting of: a first end of the first tubular member; an opposite end of the first tubular member and a terminal end of the second tubular member, said weld(s) positioned at a point upstream from the catalytic element.

9. The vehicle exhaust component according to claim 1 wherein the first member comprises a first tubular member and the second member comprises a second tubular member and wherein at least two discrete flow channels are provided for fluids transported through a first end of the first tubular member, said discrete flow channels merging within the first tubular member such that an opposite end of the first tubular member constitutes a single flow channel, said the

opposite end of the first tubular member attached without the formation of weld spatter by an electromagnetic pulse weld to the secondary element, said weld positioned at a point upstream from the catalytic element.

10. The vehicle exhaust component according to claim 9 further comprising at least one flange attached without formation of weld spatter by an electromagnetic pulse weld to at least one item selected from the group consisting of: a terminal end of at least one of the flow channels of the first tubular member and the second tubular member, said weld(s) positioned at a point upstream from the catalytic element.

11 The vehicle exhaust component according to claim 2 wherein the connector element includes at least two concentrically arranged layers, said layers attached without the formation of weld spatter by a single electromagnetic pulse weld process.

12. The vehicle exhaust component according to claim 11 further comprising at least one flange attached without formation of weld spatter by an electromagnetic pulse weld to at least one item selected from the group consisting of: a terminal end of the first tubular member, a terminal end of the second tubular member and the connector element, said weld(s) positioned at a point upstream from the catalytic element.

13 The vehicle exhaust component according to claim 2 wherein the connector element includes a wire braid, said wire braid attached without the formation of weld spatter by a single electromagnetic pulse weld process.

14 The vehicle exhaust component according to claim 13 further comprising at least one flange attached without formation of weld spatter by an electromagnetic pulse weld to at least one item selected from the group consisting of: a terminal end of the first tubular member, a terminal end of the second tubular member and the connector element, said weld(s) positioned at a point upstream from the catalytic element.

15 A method for manufacturing a component for transporting fluids from a vehicle engine through a vehicle exhaust system, said vehicle exhaust system having a catalytic element, the method comprising:

providing a first member and a second member;

positioning the second member over a portion of the first member so as to define a flow path for fluids transported therethrough; and

using an electromagnetic pulse welding process to attach the first member and second member without formation of weld spatter so as to create a welded component, said weld positioned upstream of the catalytic element.

16 The method of claim 15, further comprising:

providing a tubular member;

providing a branch opening in the first member;

positioning the third tubular member within or over the branch opening so as to define a secondary flow path for fluids transported through the component that is not parallel to the flow path defined by first member and the second member; and

using an electromagnetic pulse welding process to attach the third tubular member and the branch opening without the formation of weld spatter so as to create the component.

17. The method of claim 16 further comprising:

providing at least one non-conductive cover; and

positioning the cover proximate to at least one selected from the group consisting of: the first member, the second member, the tubular member and the branch opening, such that the cover assists in the creation of the component.

18. The method of claim 15 further comprising:

providing at least one non-conductive cover; and

positioning the cover proximate to at least one selected from the group consisting of: the first member and the second member, such that the cover assists in the creation of the component.

19. A component for transporting fluids associated with a vehicle engine or exhaust system, the component comprising:

a first non-tubular member; and

a second non-tubular member attached by an electromagnetic weld to the first tubular member so as to define a flow path for fluids being transported therethrough that is essentially free from weld spatter.

20. A component according to claim 19 wherein the first non-tubular member and the second non-tubular member form at least two discrete flow channels at a first end of the component, said discrete flow channels merging within the component such that an opposite end of the component constitutes a single flow channel.